

E1 cont'd
and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content;

selfing the first plant or crossing the first plant with a second plant, thereby producing a plurality of seeds; and

selecting seed with altered mass or oil content.

E2
24. A seed comprising a recombinant expression cassette containing an *ADC* nucleic acid, which *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105, SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content, with the proviso that the seed is not from *Arabidopsis*.

E3
35. A transgenic plant comprising an expression cassette containing a plant promoter operably linked to a heterologous *ADC* nucleic acid, wherein the *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105, SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content, with the proviso that the transgenic plant is not *Arabidopsis*.

E4
40. An isolated nucleic acid molecule comprising an expression cassette containing a plant promoter operably linked to a heterologous *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105, SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content.

E5
45. A method of modulating seed oil content in a plant, the method comprising: providing a first plant comprising a recombinant expression cassette containing an *ADC* nucleic acid linked to a plant promoter, which *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105,

SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO109, SEQ ID NO 110, and SEQ ID NO:111, and which ADC nucleic acid encodes a polypeptide that modulates seed mass or oil content;

*E5
cont'd*
selfing the first plant or crossing the first plant with a second plant, thereby producing a plurality of seeds; and

selecting seed with altered oil content.

46. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:3.
47. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:100.
48. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:101.
49. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:102.
50. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:103.
51. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:104.
52. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:105.
53. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:106.
54. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:107.
55. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:108.
56. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:109.
57. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:110.
58. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:111.

72. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:3.
73. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:100.
74. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:101.
75. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:102.
76. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:103.
77. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:104.
78. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:105.
79. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:106.
80. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:107.
81. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:108.
82. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:109.
83. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:110.

E6

*El
cont'd*

- 84. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:111.
- 85. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:3.
- 86. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:100.
- 87. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:101.
- 88. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:102.
- 89. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:103.
- 90. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:104.
- 91. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:105.
- 92. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:106.
- 93. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:107.
- 94. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:108.
- 95. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:109.
- 96. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:110.
- 97. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID NO:111.
- 98. The isolated nucleic acid of claim 40, wherein the ADC nucleic acid is SEQ ID NO:100.
- 99. The isolated nucleic acid of claim 40, wherein the ADC nucleic acid is SEQ ID NO:101.